What is claimed is:

1. A semiconductor laser comprising a semiconductor layer group, wherein said semiconductor layer group is composed of an n-type emitter layer, a p-type base layer, an active layer, an n-type base layer and a p-type emitter layer which are successively formed on a given substrate.

2. The semiconductor laser as defined in claim 1, wherein a voltage is applied to said active layer to generate a drift current therein and said active layer is excited by said drift current to generate and oscillate a light of a given wavelength.

3. The semiconductor laser as defined in claim 2, a backward voltage is applied to a pn junction composed of said p-type base layer, said active layer and said n-type base layer.

4. The semiconductor laser as defined in claim 1, wherein a voltage is applied to said active layer to generate a diffusion current therein and said active layer is excited by said diffusion current to generate and oscillate a light of a given wavelength.

5. The semiconductor laser as defined in claim 4, a forward voltage is applied to a pn junction composed of said p-type base layer, said active layer and said n-type base layer.

6. The semiconductor laser as defined in claim 1, wherein a voltage is applied to said active layer to generate a diffusion current and a drift current therein and said active layer is excited by said diffusion current and said drift current to generate and oscillate a light of a given wavelength.

7. The semiconductor laser as defined in claim 6, two kinds of forward voltages are applied to a pn junction composed of said p-type base layer, said active layer and said n-type base layer.

8. The semiconductor laser as defined in claim 1, wherein said n-type emitter layer, said p-type base layer, said active layer and said n-type base layer, which are successively formed, constitute a first semiconductor layer group functioning a bipolar transistor, and by driving said first semiconductor layer group, an amount of electrons to be injected into said active layer is controlled.

9. The semiconductor laser as defined in claim 8, wherein said p-type base layer, said active layer, said n-type base layer and said p-type emitter layer,

which are successively formed, constitute a second semiconductor layer group functioning a bipolar transistor, and by driving said second semiconductor layer group, an amount of holes to be injected into said active layer is controlled.

10. The semiconductor laser as defined in claim 9, wherein by controlling at least one of said amount of electrons and said amount of holes to be injected into said active layer, an intensity of said light generated and oscillated is modulated.

11. The semiconductor laser as defined in claim 1, wherein said semiconductor layer group is made of III-V group semiconductor compound.

12. The semiconductor laser as defined in claim 11, wherein said III-V group semiconductor compound is defined as $In_{1-X}Ga_XAs_{1-Y}P_Y$ ($0 \leq X \leq 1$, $0 \leq Y \leq 1$).

13. The semiconductor laser as defined in claim 1, wherein said semiconductor layer group includes an electron traveling layer between said p-type base layer and said active layer.

14. The semiconductor laser as defined in claim 13, wherein said electron traveling layer is made of III-V group semiconductor compound.

15. The semiconductor laser as defined in claim 14, wherein said III-V group semiconductor compound is defined as $In_{1-P}GaPAs_{1-Q}P_Q$ ($0 \leq P \leq 1$, $0 \leq Q \leq 1$).

16. A method for oscillating a semiconductor laser comprising a semiconductor layer group composed of an n-type emitter layer, a p-type base layer, an active layer, an n-type base layer and a p-type emitter layer which are successively formed on a given substrate, comprising a step of:

applying a voltage to said active layer to generate a drift current therein so that said active layer is excited by said drift current to generate and oscillate a light of a given wavelength.

17. The oscillating method as defined in claim 16, wherein a backward voltage is applied to a pn junction composed of said p-type base layer, said active layer and said n-type base layer.

18. A method for oscillating a semiconductor laser comprising a semiconductor layer group composed of an n-type emitter layer, a p-type base layer, an active layer, an n-type base layer and a p-type emitter layer which are successively formed on a given substrate, comprising a step of:

applying a voltage to said active layer to generate a diffusion current therein so that said active layer is excited by said diffusion current to generate

and oscillate a light of a given wavelength.

19. The oscillating method as defined in claim 18, wherein a forward voltage is applied to a pn junction composed of said p-type base layer, said active layer and said n-type base layer.

20. A method for oscillating a semiconductor laser comprising a semiconductor layer group composed of an n-type emitter layer, a p-type base layer, an active layer, an n-type base layer and a p-type emitter layer which are successively formed on a given substrate, comprising a step of:

applying a voltage to said active layer to generate a diffusion current and a drift current therein so that said active layer is excited by said diffusion current and said drift current to generate and oscillate a light of a given wavelength.

21. The oscillating method as defined in claim 20, wherein two kinds of forward voltages are applied to a pn junction composed of said p-type base layer, said active layer and said n-type base layer.

22. The oscillating method as defined in claim 16, wherein said n-type emitter layer, said p-type base layer, said active layer and said n-type base layer, which are successively formed, constitute a first semiconductor layer group functioning a bipolar transistor, and by driving said first semiconductor layer group, an amount of electrons to be injected into said active layer is controlled.

23. The oscillating method as defined in claim 22, wherein said p-type base layer, said active layer, said n-type base layer and said p-type emitter layer, which are successively formed, constitute a second semiconductor layer group functioning a bipolar transistor, and by driving said second semiconductor layer group, an amount of holes to be injected into said active layer is controlled.

24. The oscillating method as defined in claim 16, wherein said semiconductor layer group includes an electron traveling layer between said p-type base layer and said active layer, whereby a current oscillation due to Gunn effect of said semiconductor layer group achieves a high-speed modulation of light intensity due to a relaxation oscillation of said semiconductor laser so that an intensity of said light generated and oscillated can be modulated at high speed.